

**APEX Digital, Inc.**  
**2919 E. Philadelphia Avenue**  
**Ontario, California 91761**

**FOR SERVICE CALL: 800-4-APEX-INC**

# GB SERIES PROJECTION TELEVISIONS

## INSTRUCTION MANUAL

Projection - GB4308, GB5108



Please read this manual carefully before operation.

## BEFORE OPERATION

Dear Customer:

Congratulations! You have purchased one of the finest Color TVs on the market!

This manual will help you use the many exciting and useful features to make your TV viewing more enjoyable than ever before.

Before operating your TV set, please read all these safety and operating instructions completely and then retain for future reference.

Customer's Record

You will find the model number and chassis number on the back of your TV set.

Record these numbers in the spaces provided below.

Refer to them whenever you call upon your Apex dealer regarding this product.

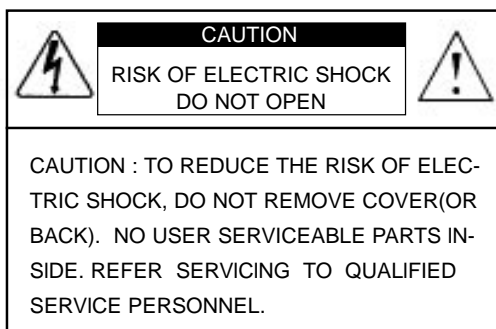
Model Number: GB4308, GB5108

Chassis Number:

## Safety Precautions

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



The symbol is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be strong enough to cause an electric shock.

DO NOT TRY TO SERVICE THIS PRODUCT YOURSELF.



This symbol is intended to alert the user to the presence of important operating and maintenance instructions in the manual.

Avoid displaying stationary images on your TV screen for extended periods of time. Stationary patterns generated by computer displays, video games, stock market reports, etc. can become permanently engrained on the picture tube. This damage is not protected by your warranty as it is the result of misuse. Should you wish to use your Apex Television to display still images, it is always advisable to reduce brightness and contrast settings. Never leave a video game or computer display unattended.

NOTE TO CABLE INSTALLER IN THE USA:

This reminder is provided to call your attention to Article 820 - 40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CAUTIONS:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE PRONGS CAN BE FULLY INSERTED INTO THE OUTLET TO PREVENT ANY EXPOSURE OF THE PRONGS ON THE POLARIZED PLUG.

## BEFORE OPERATION (continued)

# Important Safety Instructions

### CAUTION

PLEASE READ THESE INSTRUCTIONS, KEEP THESE INSTRUCTIONS AND HEED ALL WARNINGS. FOLLOW ALL INSTRUCTIONS.

Electrical energy can perform many useful functions. This TV set has been engineered and manufactured to assure your personal safety. However improper use can result in potential electrical shock or fire hazards. In order not to defeat the safe guards incorporated in this TV set, observe the following basic rules for antenna/ TV installation, use and servicing. All operating and use instructions should be followed.

Do not remove the cabinet cover. This may expose you to dangerous voltages. Refer all servicing to qualified service personnel.

### Precautions

**Power Sources** - The TV set should be operated only from the type of power source indicated on the TV set or as indicated in the Operation Manual. If you are not sure of the type of power supply in your home, consult your local power company. For TV sets designed to operate from battery power, or other sources, refer to the operating instructions.

**Grounding or Polarization** - Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding - type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

**Alternate Warnings** - This plug will only fit into a grounding-type power outlet. This is a safety feature.

If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.

**Power-Cord Protection** - Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the TV.

**Overloading** - Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in fire or electric shock.

**Lightning** - For added protection for this TV set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

If a snapping or popping sound from a TV set is heard continuously or frequently while the TV set is operated, unplug the TV set and consult your dealer or service technician. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off.

**Heat** - Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

**Accessories** - Do not place the TV set on an unstable cart, stand, tripod, bracket, or table. The TV set may fall, causing serious injury to a child or adult, and serious damage to the TV set. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or accessory recommended by the manufacturer, or sold with the TV set, and should use a mounting accessory recommended by the manufacturer.

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the TV set and cart combination to overturn.

**Water and Moisture Warnings** - Do not use the TV set near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like. The TV set should not be exposed to dripping or splashing and no objects filled with liquids, such as vases, should be placed on the TV set.

**Object and Liquid Entry** - Never push objects of any kind into the TV set through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the TV set.

**Cleaning** - Unplug the TV set from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners. Use a dry cloth for cleaning the exterior of the TV set.

**Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards or electric shock.

**Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the TV set and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the TV set on a bed, sofa, rug, or other similar surface. This TV set should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

## BEFORE OPERATION (continued)

### Precautions (continued)

**Damage Requiring Service** - Unplug the TV set from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled or objects have fallen into the TV set.
- If the TV set has been exposed to rain or water.
- If the TV set has been subject to excessive shock by being dropped, or the cabinet has been damaged.
- If the TV set does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the TV set to its normal operation.
- When the TV set exhibits a distinct change in performance-this indicates a need for service.

**Servicing** - **Do not** attempt to service the TV set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

**Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.

**Safety Check** - Upon completion of any service or repairs to the TV set, ask the service technician to perform routine safety checks to determine that the TV set is in proper operating condition.

**Disposal** - When the TV set reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the TV set.

### ANTENNA

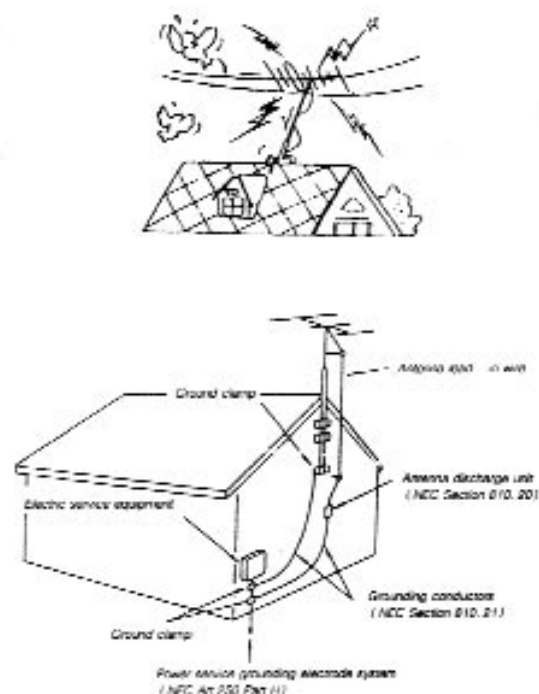
**Outdoor Antenna Grounding**- If an outdoor antenna is installed, follow the precautions below.

An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits.

WHEN INSTALLING AN OUTDOOR ANTENNA SYSTEM, EXTREME CARE SHOULD BE TAKEN TO KEEP FROM CONTACTING SUCH POWER LINES OR CIRCUITS AS CONTACT WITH THEM IS ALMOST INVARIABLY FATAL

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code in USA and Section 54 of the Canadian Electrical Code(ANSI/NFPA 70) in Canada provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Example of antenna grounding according to National Electrical Code (NEC )



**BEFORE OPERATION** (continued)**FCC Warning**

Class B Computing Device

**Information to User**

This equipment has been tested and found to comply with the limits for a class B digital device pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or TV reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1 ) Reorient or relocate the receiving antenna.
- 2) Increase the separation between the equipment and receiver.
- 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4) Consult the dealer or an experienced radio/TV technician for help and for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio -TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, D. C 20402, Stock No. 004-000-00345-4.

**FCC Warning**

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE: In order for an installation of the product to maintain compliance with the limits for a Class B device, shielded cables must be used.

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The OSD and figures shown in this manual may be somewhat different from the actual situation.

# INTRODUCTION

## Features

Conventional color TVs apply 60Hz interlaced scanning and scan a picture in two separate fields, which results in distinct scanning structural lines and line flicker. As the TVs can display only 30 frames of images per second, it cause wide --range image flicker. The larger the TV screen is, the more conspicuous the problems are. Watching this kind of TV, you are susceptible to eyestrain.

With the world's advanced digital inverter technology, APEX RPTV GB5108 is an improved product for better performance. With 60Hz progressive scanning, APEX RPTV can scan a frame of picture at a time and improve display frequency from 30 frames of pictures per second to 60. The RPTV removes completely wide --range image flicker and line flicker, and offers sharper and more lifelike pictures. APEX RPTV brings new vision of 21st century for you.

Precision vision: With progressive scanning, the RPTV automatically increases horizontal frequency from 15750Hz to 31500Hz.

DVD VIDEO PROGRESSIVE COMPONENT IN terminals: You may connect a DVD equipped with Y, PB, and PR terminals to realize 480p input mode.

Advanced projection tube: High brightness and high --resolution projection tube with the world's advanced level guarantees high brightness and reliable focus performance.

## Features INTRODUCTION

### Features

#### **English/French/Spanish Menus**

The unique pop-up English/French/Spanish menu control function makes operation more easy.

#### **181 Channel Tuner**

2-69 channels in the Air mode and 1-125 channels in the Cable mode can be preset (of which 2-13 channels' frequency in the Air and Cable modes are the same.)

Terminals for External Equipment Connection

Two sets of AV IN terminals (one located on the side as well as one set on the rear), and one set of AV OUT terminals on the rear

#### **On/Off Timer**

The TV automatically turns off or turns on and tunes to the desired channel at the time that it is programmed.

#### **Auto Off**

Under a no signal condition, the TV will turn off in 15 minutes.

#### **Childlock Function**

Prevents children from watching TV for a long period of time, especially when parents are out.

#### **Parental Control**

Prevents children from watching programs not suitable for them.

#### **Quick Selectable Picture Modes**

Allows one -touch selection of your favorite picture quality among two preset modes and one user-set mode.

#### **CCD /Text Function**

If they are included in a program, you can view closed captions or text information.

#### **Correction Technology**

Reduces picture noise and improves color quality.

#### **Black Level Extension**

Delivers more vivid pictures.

#### **Recall**

By this function, the TV can directly skip back to the previous channel.

#### **Channel Scan**

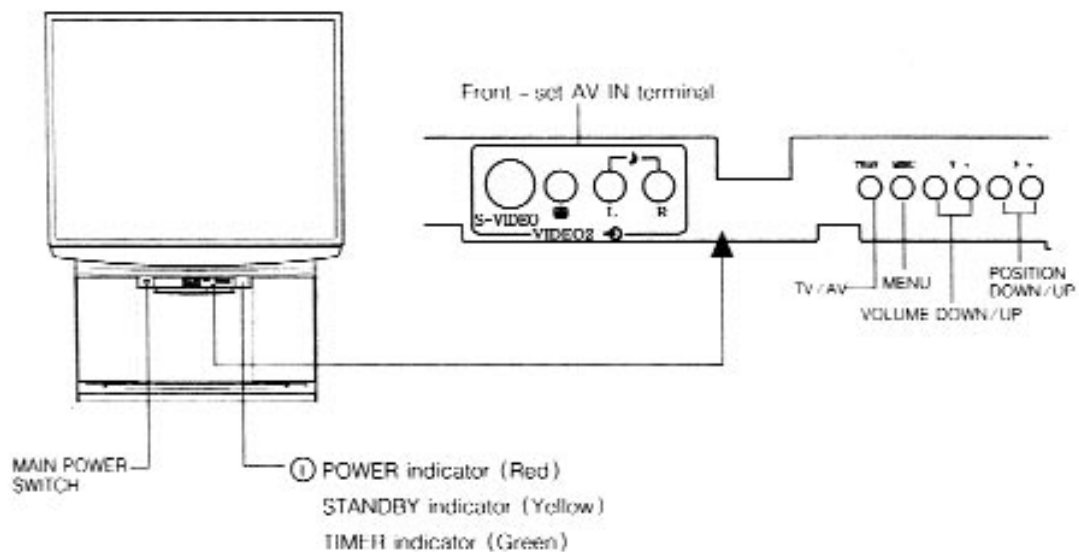
Displays all channels set in the Add mode.



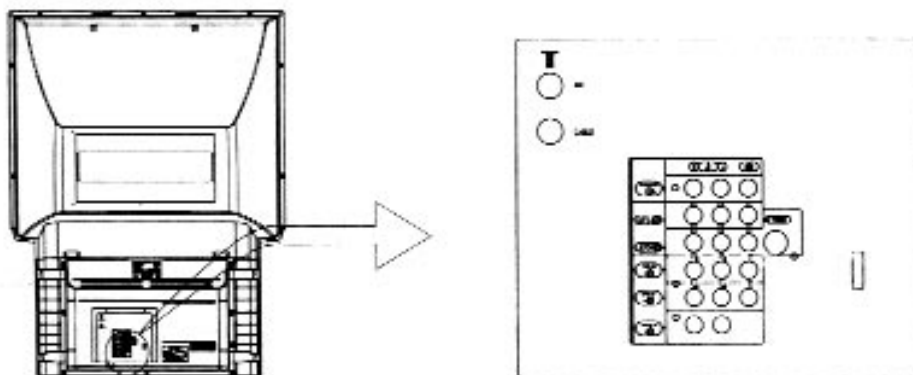
## INTRODUCTION (continued)

### Control Buttons

#### Front panel



#### Rear panel



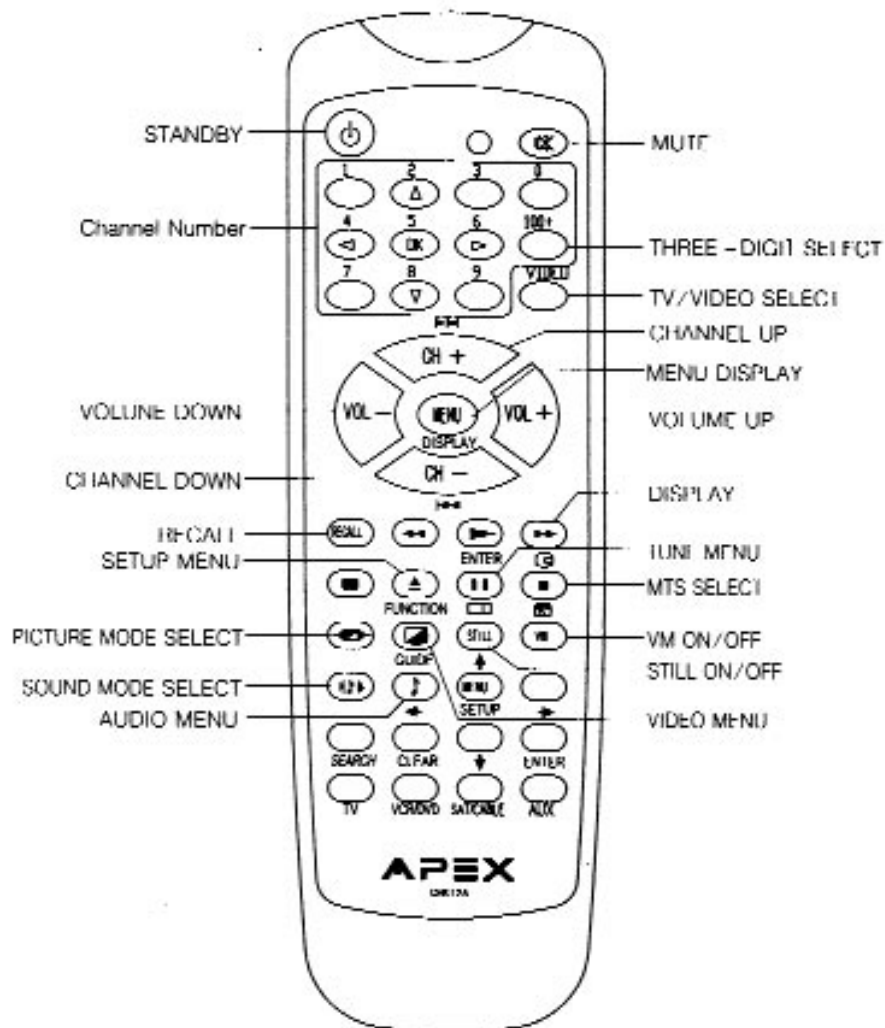
#### **Note:**

The buttons of the same name on the remote controller or the RPTV's front panel share the same function. The following section of this manual will focus on operation method of the remote controller.

## INTRODUCTION (continued)

### **Control Buttons** (continued)

## Remote controller




Notes:

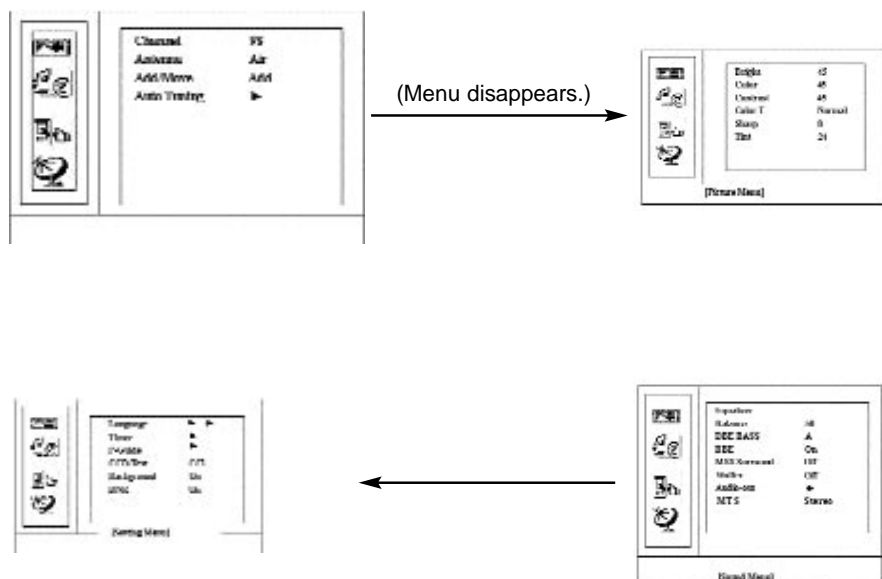
Notes: The button design and specifications of the remote controller are subject to change without notice.

## INTRODUCTION (continued)

### Menu






You can adjust or preset the RPTV with the MENU DISPLAY function on remote controller.

Press the  button repeatedly until the RPTV displays the following menus :



After selecting a menu, press the - CH + buttons to highlight the desired item and press the - VOL+ buttons to adjust.

#### Notes:

- ① There is no Tune menu in the video mode.
- ② The mark of  indicates that there is a sub - menu.
- ③ The above - mentioned menus can be called up directly by pressing the     buttons.

## INSTALLATION

### To Install the RPTV

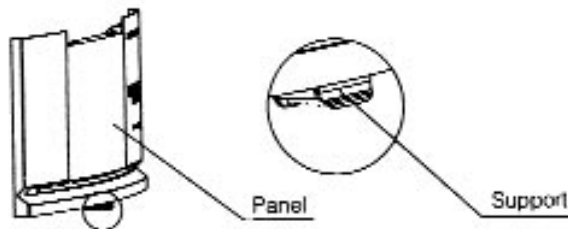
- Please read the PRECAUTIONS completely before installation.
- It is recommended to watch RPTV in soft and indirect light and face center of the screen for optimum watching effect.
- Allow enough space (at least 10cm) between the RPTV and the wall for proper ventilation.
- Avoid excessively warm or wet locations to prevent possible damage to the cabinet or components.



Keep proper watching distance



- To prevent the RPTV from toppling, there is a support under front panel of RPTV. Please contact with your dealer if there is no such support when you first open the packing carton.



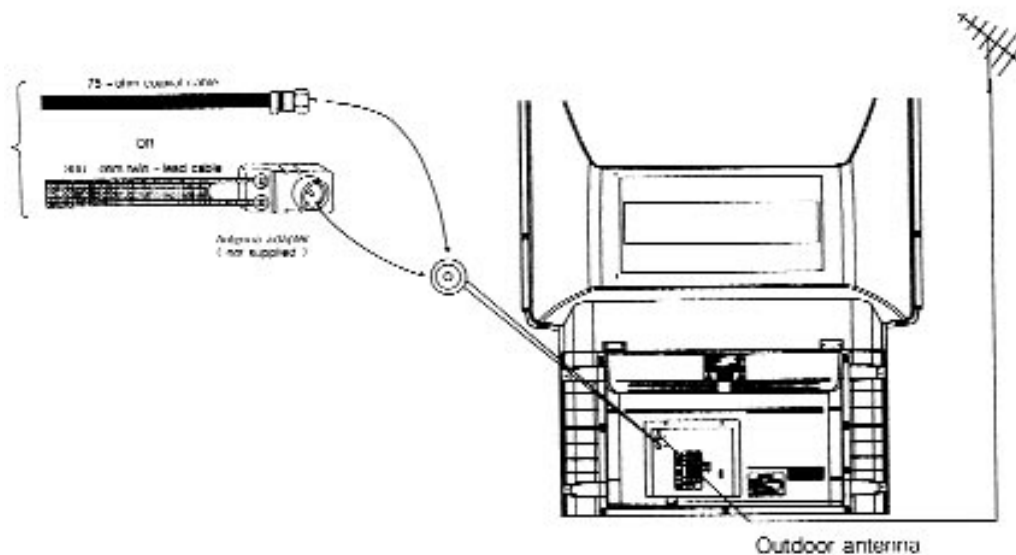
After installation, plug the RPTV in the supply socket.



## INSTALLATION (continued)

### To Connect the Antenna

An outdoor antenna or CATV is recommended for the best reception. The antenna type and its location differ dependent on local conditions.



#### Notes:

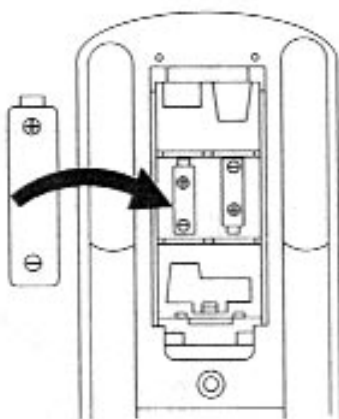
- ① It is recommended that a 75-ohm coaxial cable be used in order to eliminate possible interference and noise which may occur due to nearby radio transmissions.
- ② When using a 300-ohm twin-lead feeder, connect it to a 300-ohm / 75-ohm converter and insert the converter into the RPTV's ANTENNA IN terminal.
- ③ Connect an outdoor antenna referring to the above figure. Set up a lightning arrester and check it regularly when an outdoor antenna is used.
- ④ The antenna cable should not be tied together with other wiring.
- ⑤ Two-radio input terminal allows the remote controller to switch between two signals (e. g. antenna signal, cable signal and VCR signal )



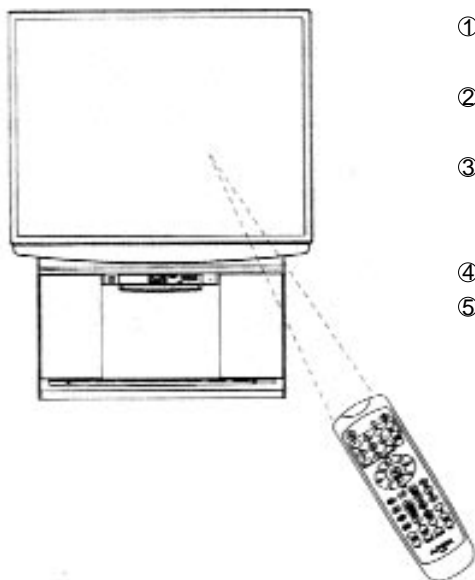
## INSTALLATION (continued)

### Remote Batteries

1. Remove the battery cover.
2. Place in two LR03WCH batteries. Make sure the positive and negative polarities are correct.



- Caring for the remote controller

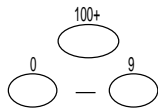


- ① When in operation, please point the remote controller directly to center of the RPTV screen.
- ② Do not repeatedly press the buttons on the remote controller too quickly.
- ③ To avoid battery leakage, remove batteries from the remote controller when it is not to be used for a long period of time or the batteries are exhausted.
- ④ Do not expose batteries to fire or disassemble them.
- ⑤ Do not expose the remote controller to impacts, water or disassemble it.

## OPERATIONS

### Basic Buttons

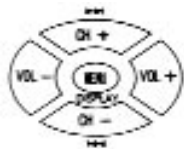
- Channel Number



Press the 100+ button repeatedly to select " - ", " - - " or " - - - " respectively.

Press the 0~9 buttons to enter a one - digit, two - digit or three - digit channel number respectively.

- - CH + , - VOL + buttons




Press the - CH + buttons to select a lower or upper position number.

Press the - VOL + buttons to decrease or increase volume.

-  button




The MUTE function is used when you answer a phone or receive guests. During watching RPTV program, press the  button to eliminate sound. Press it again to resume sound.

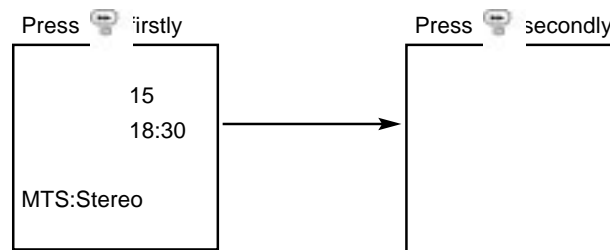
#### Notes:

- ① Pressing the VOL + button can also cancel the MUTE function.
- ② Pressing the VOL- button can decrease the volume in the MUTE mode with red characters on the screen, but not cancel the MUTE mode.

-  button




Press the  button firstly to display the current Channel No., audio modes and current time. Press it secondly to turn off the display.



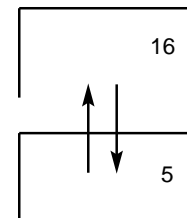
- RECALL button



Note: Pressing the  button can turn off the menu display.

Press the RECALL button repeatedly to switch the RPTV between the current channel number and previous channel number.

For example, you are watching program 5 and previously you watched program 16. Now if you press the RECALL button, the channel number will skip directly from Channel 5 to Channel 16.



## OPERATIONS (continued)

### Power On / Off




Plug in the supply socket and press the  button on the RPTV. The power indicator lights and the RPTV enters the STANDBY mode.



In the STANDBY mode, press the , or - CH + buttons on the remote controller or -P + buttons on the front panel of the set to turn on the RPTV.



Press the  button again on the remote controller and the RPTV enters STANDBY mode.



To turn off the RPTV completely, press the  button.

#### **Notes:**

- ① Avoid switching the RPTV on and off frequently. Doing so may shorten life span of internal components like heater of projection tube.
- ② After powering off the RPTV, power it on again (if necessary) only when the power indicator is off completely.

#### **Auto off without signal reception**

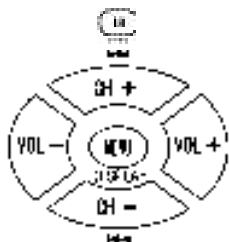
When a channel has no signal (e.g. the TV station fails to send signals) and blue background appears, the RPTV will automatically enter the STANDBY mode if no button is pressed within 15 min. If Off Time is preset and the time left is less than 15 min., the RPTV will carry out the Off Time program prior to the auto-off. (The function doesn't work in the AV mode.)




## BASIC FUNCTIONS (continued)

### Tuning in

#### Auto Program




Press the  button to call up the Tune Menu.

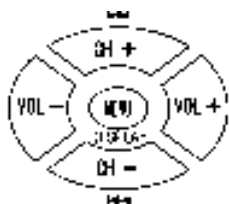
Press the - CH + buttons to highlight "Auto Program".

Press the VOL + button and the RPTV will search automatically in sequence. After searching, the RPTV will store the optimum tuning position, and unused channel number will be set to Skip mode automatically.

#### Notes:

- ① During auto search, press the  button to stop auto search.
- ② When "Antenna" is set to the Air mode, Auto - search will search from channel number 2 to 69, and when set to the Cable mode, it will search from 1 to 125 (During searching, "Skip/Add" is set to the Skip mode automatically ).

#### Channel Selection



Press the - CH + buttons to highlight "Channel" and press the - VOL + buttons or Channel Number buttons to select channel number.

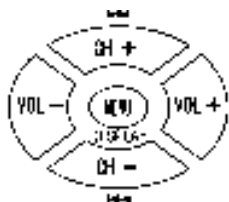
Note: A channel number of three - digits (less than 125) is required to input.

#### Antenna Selection

Press the - CH + buttons to highlight "Antenna" and press the - VOL + buttons to select "Air" or "Cable".

#### Skip/ Add

You may use this function to skip the undesired program position, thus dramatically quickening program selection by the - CH + buttons.



Select a program position to be skipped.

Press the - CH + buttons to highlight "Skip/Add", and press the - VOL + buttons to select " Skip" or "Add ".

#### Note:


Pressing the Channel Number buttons can resume the channel number which has been skipped.

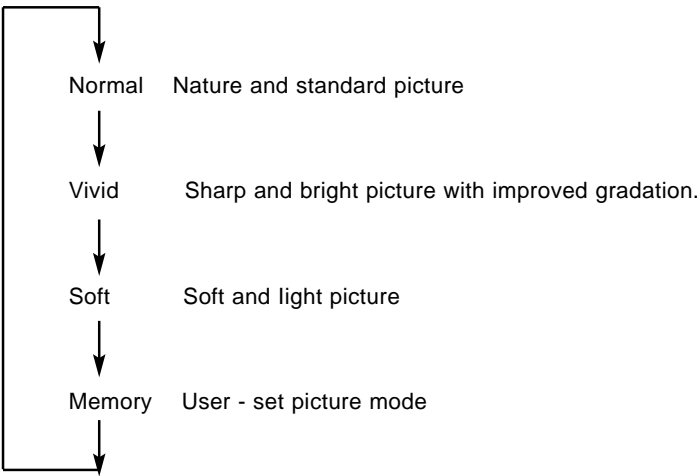
Press the Channel Number buttons to select a program position to be resumed, then set it to "Skip / Add".

OPERATIONS (continued)

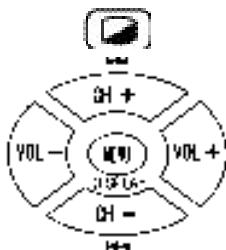
Picture Improvement




Press the  button to select one of the four picture modes.



To set picture quality




Press the  button to call up the Video Menu.

Press the - CH + buttons to select an adjustment. Then press the - VOL + buttons to adjust.

Item	Adjustment Effect	
	-	+
Brightness	Darker	Brighter
Color	Lighter	Deeper
Contrast	Lower	Higher
Color Temp	Neutral	Warm Cool
Sharpness	Lower	Higher
Hue	More Purple	More Green

Notes:

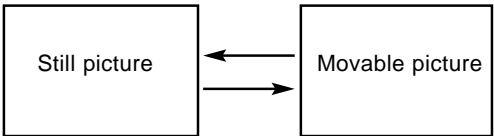
- ① The adjusted picture level is automatically stored to the Memory position.
  - ② Color Temp adjustment: 
- You can set temperature of different programs like movie and sports according to your favorite.

Still/movable picture



Press the STILL button repeatedly and the picture switches between the still and moving modes.

**Notes:**  
STILL function is not available in YPBPR input mode.



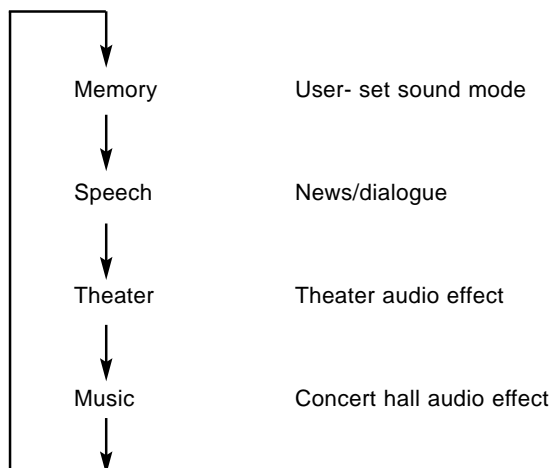
## OPERATIONS (continued)

### Sound Improvement

#### To select a sound mode

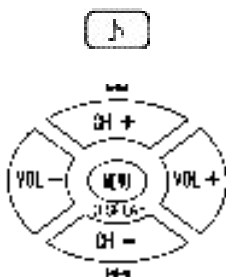


Press the button to select one of the four sound modes.

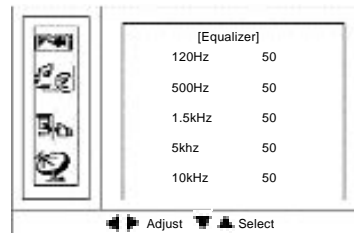


#### To set sound quality

##### Equalizer adjustment



Press the button to call up the Audio Menu.  
 Press the - CH + buttons to highlight " Equalizer"  
 and press the VOL + button to turn on the next menu display.  
 Press the - CH + buttons to select an adjustment.  
 Then press the - VOL + buttons to adjust.



Item	Press	
	-	+
120Hz	Weaker	Stronger
500Hz	Weaker	Stronger
1.5KHz	Weaker	Stronger
5KHz	Weaker	Stronger
10KHz	Weaker	Stronger

#### Notes:

- ① After entering the Equalizer menu, user can select proper ratio of bass and super through 5 - band adjustment.
- ② Press the button to return to Audio Menu.

#### Balance

Press the - CH + buttons to highlight " Balance", and press the VOL - button to decrease the right channel or the VOL + button to decrease the left channel.

#### DBE BASS

Press the - CH + buttons to highlight "DBE BASS", and press the - VOL + buttons to select "On" or "Off".  
 You can make bass richer by boosting low frequency.

## OPERATIONS (continued)

### Sound Improvement (continued)

#### **BBE**

This function can characterize the sound, generate the playback sound almost like natural sound.

Press the - CH + buttons to highlight the "BBE", and press the - VOL + buttons to select "On" or "Off".

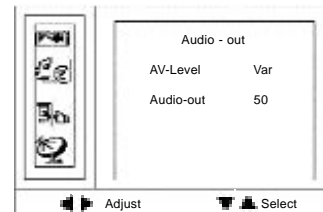
#### **MSS** (Surround control switch )

Press the - CH + buttons to highlight the " MSS ", and press the - VOL + buttons to select "On" or " Off".


#### **Audio - out**

Press the - CH + buttons to highlight the " Audio - out".

Press the VOL + button to turn on the next menu display.



#### **Notes:**

- ① Monitor volume can be adjusted when the RPTV is in "Audio - out Var", and monitor sound output will be fixed when the RPTV is in "Audio - out Fixed".
- ② Press the  button to return to Audio menu.

#### **AVC**

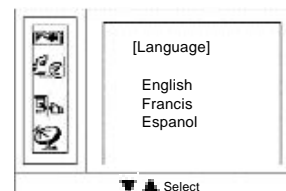
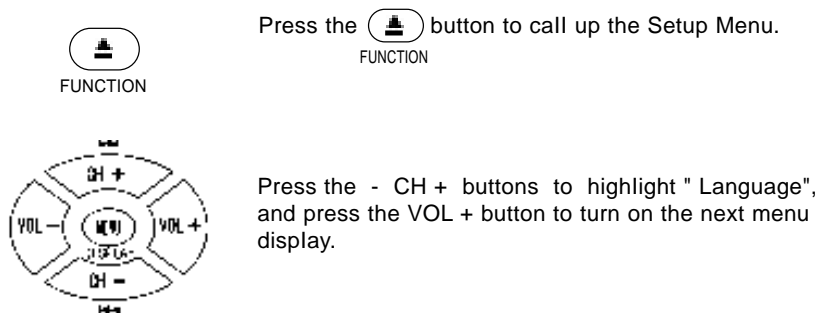
Advertisements during movies usually have a higher volume level than the movie itself. This results in annoying volume changes. You can use this function to solve these problem.

Press the - CH + buttons to highlight the "AVC", and press the -VOL+ buttons to select "On" or "Off".


## OPERATIONS (continued)

### Menu Function

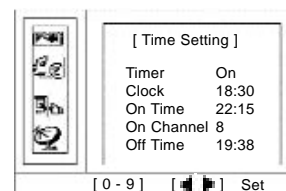
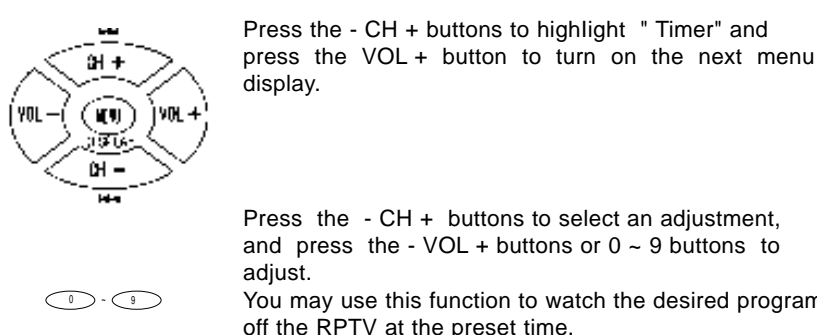
#### Language Select





#### Notes:

- 1 You may switch the languages for the On - Screen Display to English, French or Spanish.
- 2 Press the  button to return to Setup Menu.

#### Timer



#### Notes:

- ① Once On/Off Time is set, the Timer indicator turns green from red.
- ② If the RPTV is powered off by the  button, in the STANDBY mode or the setting has been executed, the original setting will be cancelled automatically.
- ③ If Auto Program begins, the previous --set Off Time will be invalid when the off time is up.
- ④ When setting Clock, On Time or Off Time, the operation is regarded as invalidity if entering number of less than four - digit.
- ⑤ Press the  button to return to " Setup Menu".

## OPERATIONS (continued)

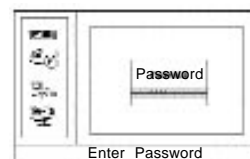
### Menu Function (continued)

#### Parental Control

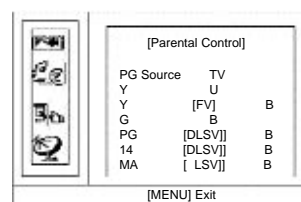
You may prevent children from watching programs not suitable for them, such as sexual or violence program.

Press the - CH + buttons to highlight the "Parental Control", and press the VOL + to display "Password" on the screen.


Press the 0 ~ 9 buttons to enter the initial password 6688 to turn on the next menu display. (when the password is renewed, the new password entered is effective and the old one is ineffective.)



Press the - CH + buttons to highlight one of the items: PG Source, Y, Y7, G, PG, 14, MA, FV, D, L, S, V. Press the - VOL + buttons to display U or B on the screen. A "U" indicates a rating which is unblocked and a "B" indicates a rating which is blocked.



#### Notes:

- ① Press the  button to return to Setup Menu.
- ② Enter your password again when you exit Parental Control, otherwise you can enter it without any password next time.

Terms in the above menus:

FV - Fantasy Violence

D - Sexually Suggestive Dialog

L - Adult Language

S - Sexual Situations

V - Violence

Y - All Children

Y7 - Directed to Older Children

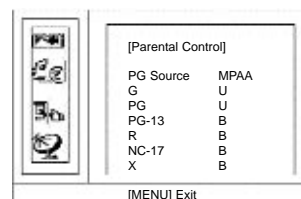
G - General Audience

PG - Parental Guidance Suggested

14 - Parents Strongly Cautioned

MA - Mature Audience Only

The following is the "PG Source MPAA" menu.



#### Blue Back

Press the - CH + buttons to highlight the "Blue Back", and press the - VOL + buttons to select "On" or "Off".

#### Notes:

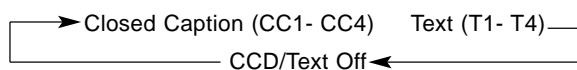
- ① The Blue function is invalid during auto - searching.
- ② If "Blue Back" is set to "On", the RPTV will display a soft blue background when no signal received.  
If "Blue Back" is set to "On", and even noise dot will be displayed on the screen when no signal is in the TV mode, and the screen becomes dark when no signal is in the video mode.

## OPERATIONS (continued)

### Menu Function (continued)

#### CCD/Text

1. Press the - CH + buttons to highlight the " CCD/Text".
2. Press the - VOL + buttons to select one from 9 modes:



When you select the Closed - Caption (CC1 - CC4) mode, the RPTV can decode CCD signal, and display it on the screen, which is especially helpful for hearing impaired individuals.

Closed - Caption provides an on - screen display of the dialogue, narration, and /or sound effects of a TV program.

When you select the Text (T1 - T4) mode, the RPTV can receive teletext signal. Text is information that is presented on a portion of the TV screen. It is usually not related to the program.

When you select "CCD/Text Off", the CCD/Text function is off.

Notes:

- ① A CCD signal may not be decoded in the following situations:
  - When a video tape has been dubbed.
  - When the signal reception is weak.
  - When the signal has been changed or altered.
- ② With signal received without "Closed Caption" or "Text", Closed caption or text characters do not appear on the screen.
- ③ If menu characters appear on the screen, there is no CCD display.

#### DNR (Dynamic Noise Reduce)


1. Press the - CH + buttons to highlight the "DNR".
2. Press the - VOL+ buttons to select " On " or " Off ".

If the signal is inferior, activate the noise reducer to improve the picture. In normal condition, it is recommended to set " Off " in case of adversely affect picture definition.

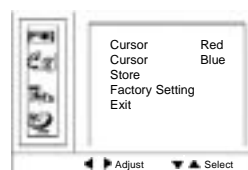
#### Convergence

The projection tube image appears on the screen in three colors (red, green and blue). If they do not converge, the color is poor and the picture blurs. Before you use your projection TV, be sure to adjust the convergence.

**Note:** The convergence of RPTV has been adjusted before they go out of factory. If you are not satisfactory, adjust the convergence according to the following procedures.

Press the  button repeatedly until the Setup Menu appears on the screen.

Press the - CH + buttons to highlight "Convergence" and press the VOL + button to turn on the next menu display shown as the right figure.



## OPERATIONS (continued)

### Menu Function (continued)

Press the --CH + buttons to highlight "Cursor Red" and press the VOL + button to enter convergence adjustment in red mode. And the following indication symbols will be displayed:

P Move

[ Mute ]: Lock/Move


[ ◀ ▶ 🔍 ]: Adjust/Select


[ MENU]:Exit

**Notes:** [Mute] refers to the  button and means lock/move the cursor.


[ ◀ ▶ 🔍 ] refers to the - VOL + and - CH + buttons, and means move/adjust the cursor.

[MENU] means return to the previous menu.

Press the - CH + and - VOL + buttons to move the red cursor to the cross to be adjusted. Press the  button to lock the cursor, and "P Lock" appears on the screen, the cursor changes into white.

Then press the - CH + and -VOL + buttons again to adjust convergence. The adjustment is completed when the red line superimpose with the other lines. Press the  button again to display " P Move", and move the cursor to the other cross to be adjusted. Repeat the above procedures to get overall desired convergence.

After the desired convergence is obtained, press the  button to return the previous menu.

Press the - CH + buttons to highlight "Store" and press the VOL + button to store the adjusted data. " Store OK", will appear on the screen in several seconds. Press the  button to return to the last menu.

Repeat the above procedures for adjusting the convergence in blue.

Press the - CH + buttons to highlight " Exit" and press the VOL + button to return to the Setup Menu.

Of course, you can also adjust convergence according to the follows.

Press the - CH + buttons to highlight "Factory Setting" and press the VOL + button to resume factory setting. Press the - CH + buttons to highlight "Store" and press the VOL + button to store the data.

Note: Storing factory setting will delete user - set data.

### **VM (Velocity Modulation )**

Sharpens picture definition to give objects a sharp, clean edge.

Press the - CH + buttons to highlight "VM", and press the - VOL + buttons to select "On"or "Off".

**Note:** Press the VM button on the remote controller to turn on/off VM function directly.



## ADDITIONAL FEATURES

### Programming the Remote Controller

#### Remote - controller switchover

Press the TV, VCR/DVD, SAT/CAB or AUX button to select the device you want to control.

#### To program the remote controller

Press and hold the TV, VCR/DVD, SAT/CAB or AUX button for over 2 seconds until the INDICATOR on the remote controller turns off (the remote controller enters the PROGRAMMING mode).

Use the 0 - 9 buttons to enter three - digit code number for your equipment. If the correct code number is entered, the INDICATOR blinks three times. If you enter a code not listed below, or you press any other buttons than SEARCH and 100 +, the INDICATOR turns off.

#### To search codes

Press and hold the TV, VCR/DVD, SAT/CAB or AUX button for over 2 seconds until the INDICATOR turns off. Release the button (the INDICATOR will light again) and the remote controller enters the PROGRAMMING mode.

Press the SEARCH button.

Press the - CH + buttons to search codes downwards or upwards. Each time you press the - CH + buttons, the code number decreases or increases by 1 while the remote controller sends the code number for POWER button on your device.

If the desired code number is found, press the 100 + button to program the code for your device until the INDICATOR blinks three times. Then the remote controller exits from the PROGRAMMING mode and returns to normal operation. Or press any other button to exit from the PROGRAMMING mode after the INDICATOR blinks rapidly eight times, and the operation is not active.

#### To check the current code number

Press and hold the TV, VCR/DVD, SAT/CAB or AUX button for over 2 seconds until the INDICATOR turns off. Release the button (the INDICATOR will light again) and the remote controller enters the PROGRAMMING mode.

Press the 100 + button.

You may read the code number according to the INDICATOR display status as follows.

Code Number			INDICATOR Display Status (2 sec.time interval between every two digits.)		
First-digit	Second-digit	Third-digit	First-digit	Second-digit	Third-digit
0	0	0	Blinks rapidly once	Blinks rapidly once	Blinks rapidly once
1	0	6	Blinks once	Blinks rapidly once	Blinks six times
1	5	0	Blinks once	Blinks five times	Blinks rapidly once
0	4	3	Blinks rapidly once	Blinks four times	Blinks three times

**Notes:** If there is no operation within 20 seconds during the steps mentioned above, the remote controller will automatically exit from the appropriate operation.

## ADDITIONAL FEATURES

### Programming the Remote Controller (continued)

#### DVD codes

Brand	Code Number
APEX	300,382
ChangHong	300,301,302,303
Aiwa	312
Hitachi	313
JVC	309,314
Magnvox	308
Mitsubishi	307
Panasonic	315
Philips	308,316,317,318
Pioneer	306,311
Proscan	310
RCA	310
Sanyo	319
Sony	305,320,321
Toshiba	304

#### LD codes

Brand	Code Number
Magnavox	322
Panasonic	326,327
Pioneer	328
Sony	323,324,325

## VCR codes

Brand	Code Number	Brand	Code Number
Admiral	373	MTC	340,378
Aiwa	340	Mutitech	337,339,340,378
Akai	350,379	NEC	333,334,336,350,352,358,364,374
Amstrad	340	Nikko	376
ASA	357	Olympus	383
Audio Dynamics	334,374	Optimus	373,376
Audiovox	376	Optonica	346
Broksonic	375,377	Panasonic	335,348,361,365,366
Bush	339	Pentax	336,342,347
Calix	376	Perdio	340
Candle	336,376	Philco	343,346,357,361
Canon	361,362	Philips	343,346,357,361
capeheart	349	Pilot	376
Carver	343	Pioneer	334,342,352,358,374
CCE	379	Portland	349
Citizen	336,337,376,379	Proscan	332,372
Craig	331,337,376	Quasar	354,355,361
Curtis Mathes	332,336,361,372	Radio Shack	329,330,331,341,346,373,376,378,381
Daewoo	349,363,377,379,380	Radix	376
Daytron	349	Randex	376
DBX	334,374	RCA	332,337,342,347,365,372
		Realistic	340,341,346,361,373,376,378,381
Dynatech	340	Ricoh	369
Electrohome	330,376,381	Salora	356
Electroponic	376	Samsung	337,363
Emerson	330,338,340,345,375,376,377,381	Sanky	373
Fisher	329,331,340,341,351	Sansui	334,350,352,353
Funai	377	Sanyo	331
GE	332,337,361,372	SBR	357
Go Video	359,360	Schneider	339
Goldstar	336,376,379	Scott	338,345,375,377
Goodmans	339	Sears	329,331,341,342,347,351,376
Gradiente	378	Sharp	330,346,381
Grundig	357	Shintom	339
Harley Davidson	378	Sony	367,368,369,370,371
Harman Kardon	364	STS	347
Hinari	339	Sylvania	340,343,344,345,356,361,378
Hitachi	340,342,347,350	Symphonic	340,378
Instant Replay	385	Tandy	340
JC Penney	333,334,337,347,350,361,364,374,376	Tashiko	340,376
Jensen	342,350	Tatung	333,350,353
JVC	333,334,336,350,352,358,374	Teac	333,340,350,378
Kenwood	333,334,336,350,352,358,374	Technics	348,361
Kodak	376	Teknika	340,361,376,378
Lloyd	340,378	Toshiba	338,341,342,345,356,363
Logik	339	Totevision	337,376
LXI	376	Vector Research	334,364
Magnavox	343,344,357,361	Victor	334,358
Marantz	333,334,336,343,357,361,374	Videosonic	337
Marta	376	Video Concepts	334
MEI	361	Wards	330,331,337,338,339,340,342,346,347,361,373,376,378,381
Memorex	331,340,361,373,376,378	XR-1000	378
MGA	330,345,356,381	Yamaha	333,334,336,350,364
Minolta	342,347	Zenith	370,371
Mitsubishi	330,342,345,352,356,358,381		
Motorola	373		

**ADDITIONAL FEATURES** (continued)**Programming the Remote Controller** (continued)**CABLE** codes

<b>Brand</b>	<b>Code Number</b>
ChangHong	500
ABC	508,509,510,511
General Instrument	525
hamiln	541,542
Hytex	508
Jerrold	506,510,511,512,513,520,525
Movie Time	515
NSC	515
Oak	501,508,516
Panasonic	502,507
Philips	514
Pioneer	503,504,517
RCA	524
Scientific Atlantic	504,505,518,519
StarCom	511
Tocom	509,512
TV86	515
United Artists	508
Viewstar	514,515
Zenith	504,521,522,523

**SAT** codes

<b>Brand</b>	<b>Code Number</b>
GE	528,531,532
General Electric	526
Hitachi	534,535
Hughes	537,538
JVC	533
Magnavox	536
Philips	536
Proscan	528,531,532
RCA	528,531,532,540
Sony	529,539
Toshiba	527,530


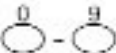






**AMP** codes

<b>Brand</b>	<b>Code Number</b>
ChangHong	700,701
Aiwa	702
Carver	709
Fisher	709
JVC	706,712
Magnavox	708
Memorex	704
Panasonic	710
Pioneer	703,704
Proton	708
Quasar	710
RCA	707,713
Sony	702,705
Techniques	710
Toshiba	711
Victor	706


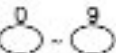






## ADDITIONAL FEATURES (continued)

### Programming the Remote Controller (continued)






#### Operating a VCR

Press	To
	Power on the VCR
	Select channels directly
	Change channels
	Play video tape
	Stop
	Search forward or backward
	Pause
	Record

#### Operating a DVD player

Press	To
	Power on the DVD player
	Select chapters directly
	Search chapters forward or backward
	Play DVD
	Stop
	Pause
	Move the cursor in the menu
	Display the DVD menu

#### Operating a laser disc player

Press	To
	Power on the laser disc player
	Search chapters forward or backward
	Play disc
	Stop
	Pause

#### Note:

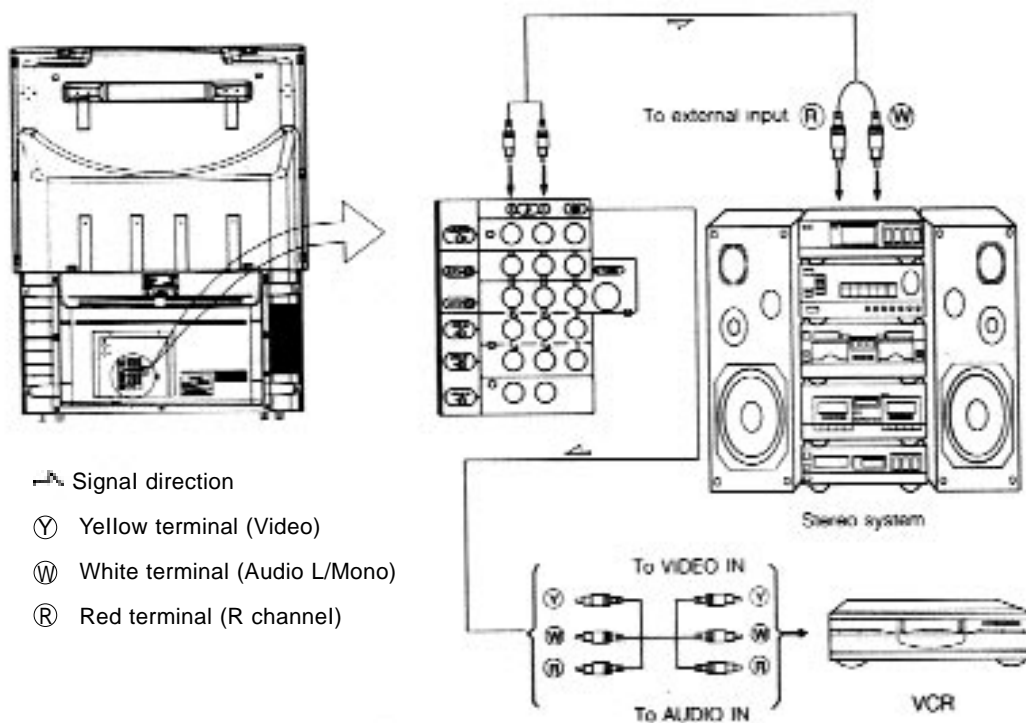
When operating your non - TV AV equipment with the remote controller, refer to operation instructions of your original remote.

## EXTERNAL EQUIPMENT CONNECTION

### How to Connect to External Equipment

Please turn off the power supply of the RPTV and external equipment before connection. Read the operation manuals of the external audio/video equipment that will be connected to the RPTV completely.

You can connect a stereo system to the MONITOR OUT terminals on the RPTV to enjoy a high - quality sound from the stereo system. Or connect a VCR to the RPTV to record programs. The MONITOR OUT terminals output the audio and video signals being monitored on the RPTV.

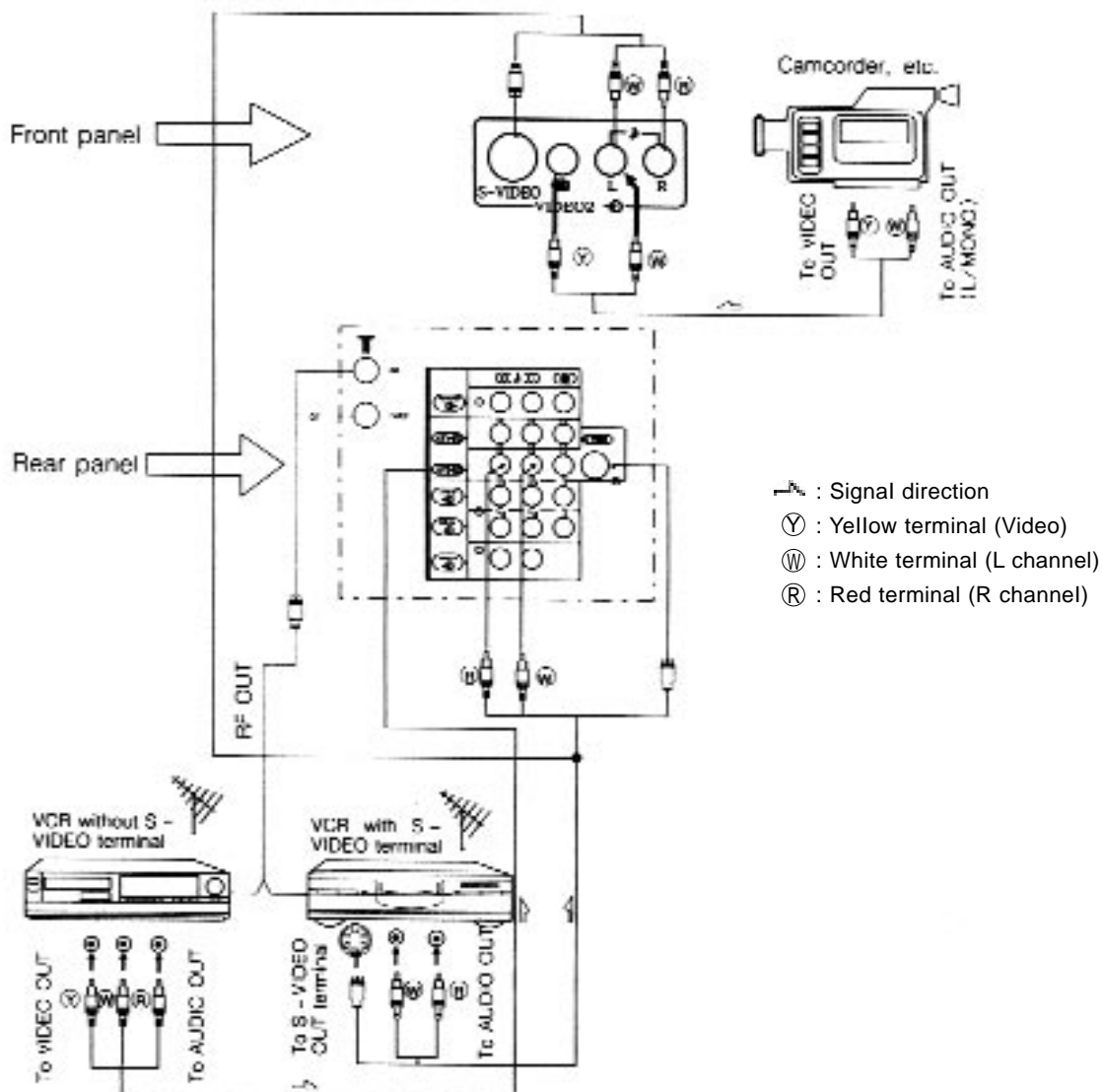


## EXTERNAL EQUIPMENT CONNECTION (continued)

### How to Connect to External Equipment (continued)

You can connect video equipment such as VCD, VCR or camcorder to this RPTV and enjoy the high - quality picture.

If your video equipment has an S - VIDEO OUT terminal, connect it to the S - VIDEO IN terminal of the unit. If not, connect it to the VIDEO IN terminal.



#### Notes:

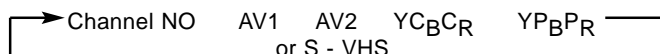
- ① If your external equipment can not output/input stereo, connect its AUDIO OUT/IN terminals to the MONO IN/OUT terminals on the rear AV1 or front AV2 since L/MONO IN is not available for rear AV2.
- ② The front AV2, rear AV2 and S --VIDEO can not input at the same time. YCBCR and YPBPR share the same audio input channel.
- ③ It is normal if the picture at VIDEO - OUT is black and white when the signal is from S --VIDEO terminal or YCBCR terminals.

## EXTERNAL EQUIPMENT CONNECTION (continued)

### How to Connect to External Equipment (continued)

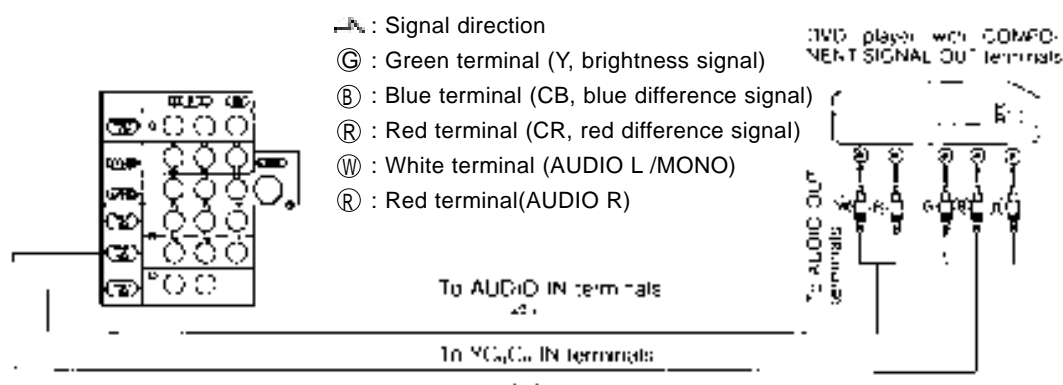
TV/AV selection

Press the VIDEO button repeatedly to select one of the following modes.



- TO connect the DVD COMPONENT IN terminals

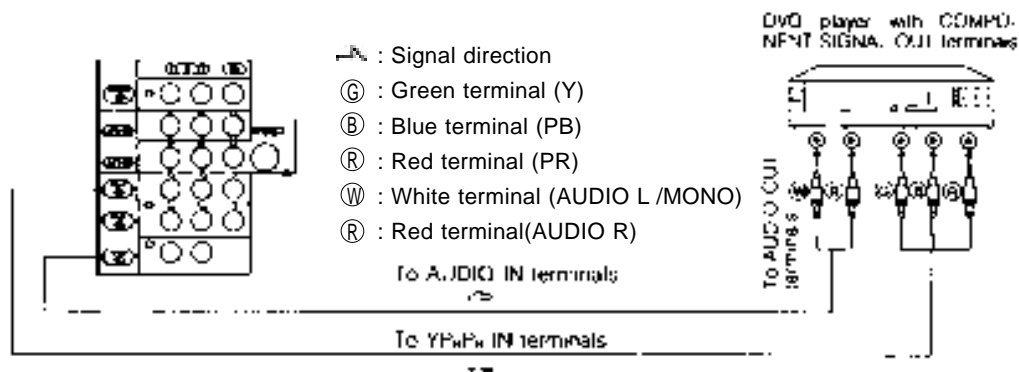
The RPTV has DVD VIDEO COMPONENT SIGNAL IN terminals (Y, CB and CR.). Connect them to a DVD player equipped with this kind of special terminals as follows, through which the RPTV can deliver sharper, brighter and more vivid pictures.



Press the VIDEO button repeatedly to switch the RPTV to the YCBCR mode.

- To connect the DVD PROGRESSIVE COMPONENT IN terminals.

The RPTV has DVD PROGRESSIVE COMPONENT IN terminals (Y, PB, and PR). Connect them to a DVD player equipped with kind of special terminals as follows, and realize 480P input mode.



#### Notes:

In the YPBPR mode, no YPBPR signal outputs from the MONITOR terminals.



## EXTERNAL EQUIPMENT CONNECTION (continued)

- Before calling service personnel, please check the following chart for a possible cause to the trouble you are experiencing.

Symptom	Check these things
No power supply	<ul style="list-style-type: none"> <li>• Make sure the power cord is plugged in.</li> </ul>
Poor color/hue	<ul style="list-style-type: none"> <li>• Make be the misadjustment for contrast,color and hue.</li> </ul>
Spots appear on the screen.	<ul style="list-style-type: none"> <li>• May be jamming from cars, motorcycles, electric trains, high tension lines, neon signs,hair dryers, etc.</li> </ul>
Stripes appear on the screen.	<ul style="list-style-type: none"> <li>• May be jamming from other TV receivers, personal computers,and TV games as well as interference from radio station.</li> </ul>
Double or triple images	<ul style="list-style-type: none"> <li>• May be caused by reflection from nearby mountains or buildings.</li> <li>• Check if the direction of the antenna has changed because of strong wind,etc.</li> </ul>
Snowy picture	<ul style="list-style-type: none"> <li>• Check the antenna/cable connections</li> <li>• Check if the direction of the antenna has changed.</li> </ul>
Abnormal color or no picture	<ul style="list-style-type: none"> <li>• May be due to improper fast power-on. Power off the RPTV, then power it on again.</li> </ul>
The remote controller does not work.	<ul style="list-style-type: none"> <li>• The batteries in the remote controller may be exhausted.</li> <li>• Check the orientation of the batteries.</li> </ul>

## SPECIFICATIONS AND ACCESSORIES

Rated voltage	AC:120V,60Hz
Rated power consumption	~250w
Dimensions	~1092mm(w)°;1420mm(h)°;560mm(w)
Weight	~70.5kg
Projection screen	Effective screen size:1035mm(w)°;778mm(h)
Channel coverage:	VHF 2~13 UHF 14~69 CABLE TV:MID BAND(A-8~A-1,A~1) SUPER BAND(J-W) HYPER BAND(AA~22,AAA,BBB) ULTRA BAND(65~94,100~125)
Channel preset	181
Television system	NTSC-M
Antenna input	75 (unbalanced)
Audio output	>10W+10W(THD=7%)
Accessories supplied	Operation manual Remote controller LR03WCH alkaline batteries(2)

Specifications are subject to change without notice.

## LIMITED UNITED STATES WARRANTY

Apex Digital, Inc makes the following limited warranties. These limited warranties extend to the original consumer purchaser or any person receiving this product as a gift from the original consumer purchaser and to no other purchaser or transferee.

### Limited One - Year Warranty

Apex Digital, Inc warrants this product and its parts against defects in material or workmanship for a period of one (1) year after the date of original retail purchase. During this period Apex Digital, Inc will repair or replace a defective part or product at their option, with a new or refurbished part or product, without charge to you. " Authorized " Apex Digital, Inc Service Center personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the Authorized Apex Digital, Inc Service Center's repair facility for repair and then returned to your home at no cost to you.

### Limited Two Year Warranty

Apex Digital, Inc further warrants the picture tube in this product against defects in materials or workmanship for a period of two (2) years after the date of original retail purchase. During this period Apex Digital, Inc will replace the defective picture tube or product at their option with a new or rebuilt picture tube or at their option replace the entire product with a new or refurbished product at no charge to you; if however the defective picture tube or product is replaced after one (1 ) year from the date of the original retail purchase, you pay all labor, packing, transportation and insurance charges involved in the replacement.

### Rental Product

The warranty for a rental product begins with the original date of receipt by the rental firm.

### Your Responsibility

The above warranties are subject to the following conditions:

- You must retain your bill of sale to provide proof of purchase
- All warranty service of this product must be made by an Authorized Apex Digital, Inc Service Center
- These warranties are effective only if the product is purchased and operated in the U S. A.
- Labor service charges for set installation, setup, adjustment of customer controls and installation or repair of any type of antenna or cable systems are not covered by this warranty. Reception problems caused by inadequate antenna or cable system are your responsibility.
- Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or damage to product or parts caused by misuse, accident, damage caused by Acts of God, such as lightning or fluctuations in electrical power, improper installation, improper maintenance or use in violation of instructions furnished by us, or to product which has been modified or had the serial number removed, altered, defaced or rendered illegible.

### How to Obtain Warranty Service

If after following all the operating instructions in this manual and reading the section Troubleshooting you find that service is necessary:

1. Contact our Customer Service Center directly call 866 4 APEXINC (866 427 --3946 ), Mon -- Fri 8am --5pm (Pacific Time)
2. After obtaining the requested information. You must present your bill of sale to the Authorized Service Center to obtain warranty service.
3. Authorized Apex Digital, Inc Service personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the Authorized Service Center's facility for repair and then returned to your home.

### Limitations

All warranties implied by state law, including the implied warranties of merchantability and fitness for a particular purpose , are expressly limited to the duration of the limited warranties as set forth above. With the exception of any warranties implied by state law as hereby limited, the foregoing warranty is exclusive and in lieu of all other warranties, guarantees, agreements and similar obligations of manufacturers or seller with respect to the repair or replacement of any parts. In no event shall Apex Digital, Inc be liable for consequential or incidental damages.

No person, agent, distributor, dealer or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which action must be commenced to enforce any obligation of Apex Digital, Inc arising under this warranty or under any statute, or law of the United States or any state thereof, is hereby limited to ninety (90 ) days from the date you discover or should have discovered the defect. This limitation does not apply to implied warranties arising under state law.

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## Packing List

NO.	Parts	Quantity	Remarks
1	RPTV Receiver	1	
2	Universal Remote Controller	1	
3	Operation Manual	1	
4	LR03WCH Alkaline Batteries	2	

**Apex Digital Inc.**

2919E.Philadelphia St.  
Ontario,Ca 91761

[www.apexdigitalinc.com](http://www.apexdigitalinc.com)